FACILITATOR'S EXECUTIVE SUMMARY

SUMMARY OF CMRS WORKSHOP KEY ISSUES AND DISCUSSIONS, WASHINGTON, D.C. 7 - 8 JUNE 2017

The U.S. Department of State's Office of Weapons Removal and Abatement (PM/WRA) hosted the workshop in Washington, D.C. on 7-8 June 2017 to collect best practices and lessons learned through implementation of the Cluster Munition Remnants Survey (CMRS) to date and to inform future CMRS activities.

National authorities of Cambodia, Lao PDR and Vietnam, national and international operators, as well as other stakeholders, attended the workshop. The CMRS workshop was organized by CISR and facilitated by NPA.

This executive summary lists key issues discussed and common conclusions reached during the CMRS Workshop prepared by its facilitator, NPA Lao Operations Manager, Mr. Jan-Erik Støa. This summary is based on the presentations given during the workshop, as well as discussions and country specific break-out sessions.

1. **What is Cluster Munition Remnants Survey (CMRS)?**

CMRS is the combination of non-technical survey (NTS) and technical survey (TS) procedures used to identify Confirmed Hazardous Areas (CHA) in land previously suspected of Cluster Munition Remnants (CMR) contamination. All participants in attendance accepted this definition.

2. **International/National Standards and Operator Standard Operating Procedures (SOPs) for CMRS**

IMAS is not fully adjusted to CMRS procedures and the National Mine Action Standards (NMAS) for survey and clearance of CMR should be based on country-specific requirements to ensure that they differentiate between mine and cluster munition threats. The NMAS should outline and define key requirements, but allow flexibility for operator SOPs, recognizing that the approach may be different in different provinces based on the conditions on the ground.

3. **The Importance of Information Management (IM) in the CMRS Process**

The CMRS methodology depends on a good and functional, open and transparent Information Management (IM) system. Workshop participants agreed that IMSMA is the key tool for reporting, storing and analyzing data before, during and after the completion of CMRS. The National Data Base Units in all three countries should be strengthened.
The workshop highlighted the following as essential to the CMRS process: cooperation between all stakeholders, and a transparent data base system

where information is made available and easily accessible for all stakeholders.

4. **The Use of Available USAF bombing data in Southeast Asia (SEA) during CMRS**

Workshop discussion in regard to the USAF bombing data and its use in the CMRS process concluded with the following points:

a) The USAF bombing data set is not complete.
b) The data cannot be linked directly to the ground situation as evidence[1], but it can be a good basis for threat assessment and further planning the of CMRS process.
c) The data can be used in preparation before and after NTS:
    i. Type of Bomb Live Unit (BLU) that can be expected to be found in the area
    ii. The number of BLU dropped on the area
    iii. The expected target for the drop
    iv. Estimated size of CMR contamination, based on the points above

5. **The Use of Other Historical Data Available on IMSMA or Other IM Systems**

The availability of historical data for CMRS is different between Cambodia, Lao PDR and Vietnam and should include CMR related-data only. This CMR data can include, but is not limited to: previously conducted impact surveys, previously conducted general survey, past base line surveys and area clearance tasks, previous EOD spot task/roving tasks and accident locations.

Workshop participants agreed all historical data should be used and evaluated during NTS as part of the CMRS process. The data stored on IMSMA must be accurate and checked to match the situation on the ground. This issue is specifically related to old data stored on IMSMA in Lao PDR.

6. **Team Structure for CMRS**

The discussions related to team structure did not conclude with an agreement on what is the most efficient and effective structure.

Across the region, the team structure varied from 2-4-5-6-8-11-12 people in the NTS/TS teams. Workshop participants generally agreed on importance of allowing flexibility and adaptability of team structures based on the context.

7. **The Use of Multi-Role Teams or Dedicated NTS, EOD and TS teams**

NPA (Cambodia and Lao PDR), the Cambodian Mine Action Centre (CMAC) and HALO Trust use a one-team approach to conduct NTS, demolitions and TS in one process (a multi-task team). MAG, UXO Lao and NPA Vietnam use a dedicated team for each individual activity.

[1] Facilitator's note: Cambodia and Lao PDR National Mine Action Authorities agreed, but Vietnam, where USAF bombing data is used as direct evidence did not support the decision.

Participants recognized the importance of NTS, demolitions and TS activities occurring as close together as possible, but reached no firm conclusion on this topic. The training requirement and level of staff understanding of CMRS will be higher for multi-role teams. Using dedicated teams may allow for more specialized training in areas such as interview and EOD skills, but involves at least three different teams working in the same area (compared to one team for all three tasks). Flexibility in planning for best operational deployment to suit a particular situation was highlighted.

8. Non-Technical Survey

While current IMAS definition can be used, NMAS should be should be adjusted to be in line with CMRS methodology and reflect inherently different nature of CMR threat (from the mine threat) in SEA countries. For example such threat assessment may allow may allow for the use of detection tools during NTS as well as allow that Personal Protection Equipment (PPE) may not be worn during NTS/TS.

NPA, HALO, and CMAC believe using detection tools during NTS assists with finding evidence on the ground. For context, it can be very difficult to find CMR evidence in SEA due to heavy vegetation, especially if key informants or villagers are unable to assist.

Continued threat assessment is needed during CMRS. CMRS cannot be used if anti-personnel or anti-tank mines or improvised explosive devises are a possible threat in the proposed survey area.

9. Preparation before Field Deployment in NTS

Commonly referred to as desk top assessment, preparation before NTS activities begins should include, but is not limited to:

a) Analysis of available USAF bomb data;
b) Analysis of all available historical data and preparing a map overlay of the survey target area;
c) Comparison and corrections to any previous data errors reported into IMSMA;
d) Collection and analysis of other potentially relevant data to NTS, such as national/provincial/district/communal/village-level plans or data from other sources (commercial operators, military, etc.)
e) Identification and improved coordination with all stakeholders to increase ownership and understanding by all involved in the CMRS process.

10. Village Meeting during NTS

Participants discussed the need for increased coordination before and during NTS activity.

Important factors to consider during the preparation and conduct of a village meeting were discussed and key points identified were:

a) Involve and coordinate with all stakeholders;

b) Have all possible evidence points identified and a plan for how to confirm these on the ground;
c) Consider the time when most villagers are available (for example, morning, mid-day, evening, harvest season vs rainy season, etc.)
d) Consider how to motivate villagers to attend (examples involved use of gifts, providing water, involving authorities, use of paid key informants, use of other existing official or volunteer structures in the village, conduct house hold interviews, etc.)
e) Provide a detailed debrief to villagers when NTS have been completed. Include information about what has been done and what is remaining;
f) Have teams spend more time in the village to increase and information sharing. If possible, the team should camp inside the village;
g) When BLU are located during NTS it was a general agreement that demolitions should be conducted immediately. This process also increases and generates more trust and more information might be volunteered by the villagers.

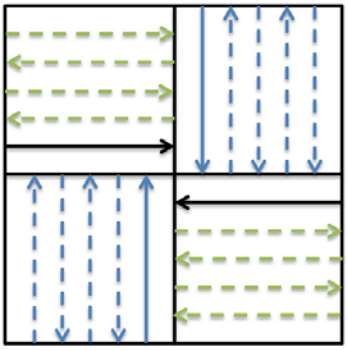
11. Technical Survey

Workshop participants discussed the importance of analyzing the findings from NTS before TS operations start. MAG has developed an Evidence Point Polygon (EPP) methodology as a useful tool in planning because initial CHAs (iCHAs) are plotted as part of the NTS desk-top exercise. Within the boundaries of iCHAs no TS is required, resulting in time and resources efficiencies. In comparison, other operators plot evidence on a map overlay. Google Earth is commonly used to complete the map overlay method. Technical survey plans should be flexible and adjust on a regular basis during the process (in some cases, daily).

If there has been a long delay between teams complete NTS to the start of TS, CMAC recommended conducting a new NTS to ensure that all evidence is considered during TS, which also shows the need that NTS and TS need to closely follow each other.

12. The Standard TS Box:

The standard TS search box is 50 meter x 50 meter, which totals 2,500 square meters.
CMRS teams can subdivide the TS search box into 4 smaller 25 meters x 25 meters boxes. Initially, the search inside the boxes was more random. The search now follows a more structured approach, as shown below.



13. The TS Search Procedure of One 50 x 50 Meter Box:

The box grid system in SEA is based on a 1 km x 1 km map grid. Every 50 x 50 meter box has its own individual identification number.

The normal handheld GPS provides accuracy within 2 to 3 meters, depending on number of satellites available at the time of work. The use of Differential GPS can increase accuracy, but is not deemed necessary during TS due to its high cost and normal GPS can provide sufficient accuracy.

Different tools can be used and all countries use different models of hand held metal detectors or large loop detectors. NPA is testing the use of dogs for TS, but the trials are not yet completed.

14. Time Spent Searching in the Box:

The target time for a team to complete their search of a box finding with confidence all possible evidence varies but most organizations designate a minimum of 30 minutes. In Lao PDR, the NMAS states that teams cover a minimum of 50 percent of the box during the search. This SEA general rule is applicable in yellow boxes (yellow designation when only CMR fragment contamination is found) and in green boxes (green designation when no CMR contamination is found during survey). As soon as a team finds evidence (red box designation) the search in the box will stop and teams move into next box.

The team leader or supervisor may order to increase the search time in every box if he/she is not confident that the minimum requirements were reached and/or the team leader suspects there is further evidence to find.

The team leader or supervisor's decision will depend on the following considerations:

a) <u>Ground Conditions</u>
   i. Heavy mineralized soil can influence the performance of any metal detector and this must be considered when different detector settings are determined. This may influence the speed of the search.
   ii. High levels of fragmentation or CMR fragments, alone or mixed with other ERW, will influence the team's ability to find solid

evidence of BLU. When locating other ERW, the team leader will mark and record it for demolition and this will delay the search within the box.

iii. Hard ground makes the investigation of signals more time consuming and may influence the search time in the box.

iv. Soft ground in the rainy season makes the investigation of signals more time consuming and may influence the search time in the box.

b) Vegetation

i. The SEA region has a number of different vegetation conditions ranging from flat, sandy soil and light vegetation to very dense jungle and mountains. In areas with difficult vegetation, the minimum search time needs to be extended.

c) Historical Data and Type of BLU Expected to be found

i. If the historical data and US bomb data indicate a high number of BLU in an area, but the search in the box cannot locate any evidence on the ground, the team leader will increase search time in the box to ensure the team did not miss evidence.

ii. If the team only finds fragments and historical data indicates a low number of BLU, the team leader will use this indication to increase search time in the box to ensure that no evidence is missed.

15. Linking CMRS to Clearance

Workshop participants agreed that clearance is the best form of Quality Control and Quality Assurance (QA/QC) for the TS component of the CMRS process and the importance of linking CMRS to clearance was highlighted. After analyzing the results of clearance activities, CMRS teams may adjust their procedures, if CMRS results are not providing sufficient or accurate information to the clearance team. This feedback loop between clearance and CMRS is critical to avoid underestimating or overestimating the size of the CHA. The example of evolution of CMRS procedures in Vietnam based on clearance feedback from MAG to NPA's CMRS results was used as example of good cooperation and good practice. More details on how the CMRS was improved by feedback from clearance will be outlined in a specific report from MAG/NPA Vietnam towards end of 2017.

16. Clearance Depth

The national standard for minimum clearance depth of CMR is 20 cm in Cambodia, 25 cm in Lao PDR and 30 cm in Vietnam.

Cambodia bases their minimum standard depth on the realization that most hand held detectors cannot reliably detect BLU below 20 cm, and by analyzing clearance data from five years in East Cambodia which indicates that 99 percent of all CMR are between 5 and 17 cm in the ground.

There is no maximum clearance depth. If operators suspect CMR is deeper than 20 cm, the team leader can order an additional search with large loop

detectors. Vietnam and Lao PDR base their minimum clearance depths on agricultural activities and MAG OM confirmed that CMs are commonly found in the Lao PDR between 20- 25 cm. The workshop facilitators encourage each country to evaluate their standards further in-country.

17. Tools Used in CMRS and Clearance

The most common detection tools used in CMRS and clearance are the handheld metal detector (Minelab, Ebinger or Vallon brand) and large loop detectors (Ebinger or Vallon brand).

NPA and CMAC currently use dogs for clearance and the testing of dogs is underway for TS. Operators do not use machines for TS or clearance, but will use different brush cutter systems to prepare an area for clearance operations.

Workshop participants discussed other tools, including:

i. The use of tablets; the presentation from CISR JMU/NPA highlighted the need to test mapping tools to increase their accuracy and efficiency. This involves more support for testing and development.
ii. The use of Quad-copters which can be a useful planning tool for NTS, TS and clearance; the use of ATV should be further tested in areas where access to the site is difficult with vehicles or motor bikes. ATV can improve safety and efficiency for the team.

18. Handover Process Following CMRS and Clearance

Workshop participants discussed the importance of a well-coordinated and complete handover process following CMRS and clearance. Those involved in the CMRS can improve this process by involving all relevant stakeholders, not only the villagers and operators. The final results from CMRS and Clearance must be reported and recorded into IMSMA and it will be the national mine action authority (NMAA) that ultimately accepts the result and assumes ownership of the data.

Since CMRS is an ongoing survey process, workshop participants agreed operators are not liable if new evidence is found as long as the national survey standards have been applied, but authorities may task them to conduct more survey to ensure that the quality of survey is in line with NMAS and the operators SOP. There are different requirements for liability in the Cambodia, Lao PDR and Vietnam following clearance, but workshop participants agreed that the NMAA that is ultimately responsible for the follow-up, acceptance and storage of data.

19. When is Land Considered Safe?

This was a point of discussion several times during the workshop.
In Cambodia and Lao PDR, this is regulated by NMAS. Vietnam is currently developing its standards in relation to the topic.

20. Quality Management and Monitoring and Evaluation

Clearance is the best verification for the quality of CHA's. All workshop participants agreed that quality assurance (QA) rather than quality control (QC) should be the focus of quality management during CMRS as it is extremely difficult to conduct a post-survey QC as there are no lanes marked during the process. This is also in line with the GICHD study on Quality Management that states country QM systems should focus more on QA rather than QC.

In Lao PDR, the verification by clearance may not be best suited for verification of NTS or understanding of the CMRS results at the village and district level, and supplementary QC through a Monitoring and Evaluation system should be considered.

21. Management of Residual Explosive (MORE) Project

GICHD provided a brief introduction of the MORE project and its implementation in SEA. The project is in its early stages and is in negotiations with each country. In Vietnam, they have already done a short film on MORE and they want to show it at the intersessional meetings in Geneva. An ageing study is also in the process of being negotiated and will take place in Vietnam.

22. The need for prioritization for clearance based on assessment of onwards impact

Taking the MAG-NPA partnership in Quang Tri, Vietnam as an example, it was agreed that in the majority of cases clearance task prioritization needs to be a key component of any integrated survey and clearance program.

In Quang Tri the original concept was that MAG would systematically clear CHAs defined through the CMRS process on a commune-by-commune, district-by-district basis. It became apparent though that as CMRS progressed three factors meant a clearance prioritization process was required:

1. Significant numbers of CHAs being produced
2. These CHAs expand under clearance due to fade-out
3. Available clearance capacity not sufficient to keep up with the number of CHAs being defined

MAG, working with the Quang Tri mine action authority, has developed a 'Priority Assessment Form' proposed to be used to rank clearance tasks as low/medium/high priority. This ranking proposes a scoring system that includes criteria on current and planned land use, assessment of threat to life, community access to the area, and development plans (be they Government funded or another development actor). Through this system a documented and transparent means would be available to decide on which tasks will be cleared and in what order.

23. Lessons learnt from the cooperation between MAG and NPA in Vietnam

The close cooperation and partnership between MAG and NPA has proven to be important in the development of the CMRS methodology. Through MAG's clearance of CHAs, generated during NPA CMRS operations, immediate feedback has been provided on the accuracy and quality of survey results. This feedback loop and close dialogue between NPA and MAG has provided important data to further inform the ongoing review process and evolvement of the CMRS methodology, enabling ongoing improvement in accuracy of the CHA sizes as produced by the CMRS